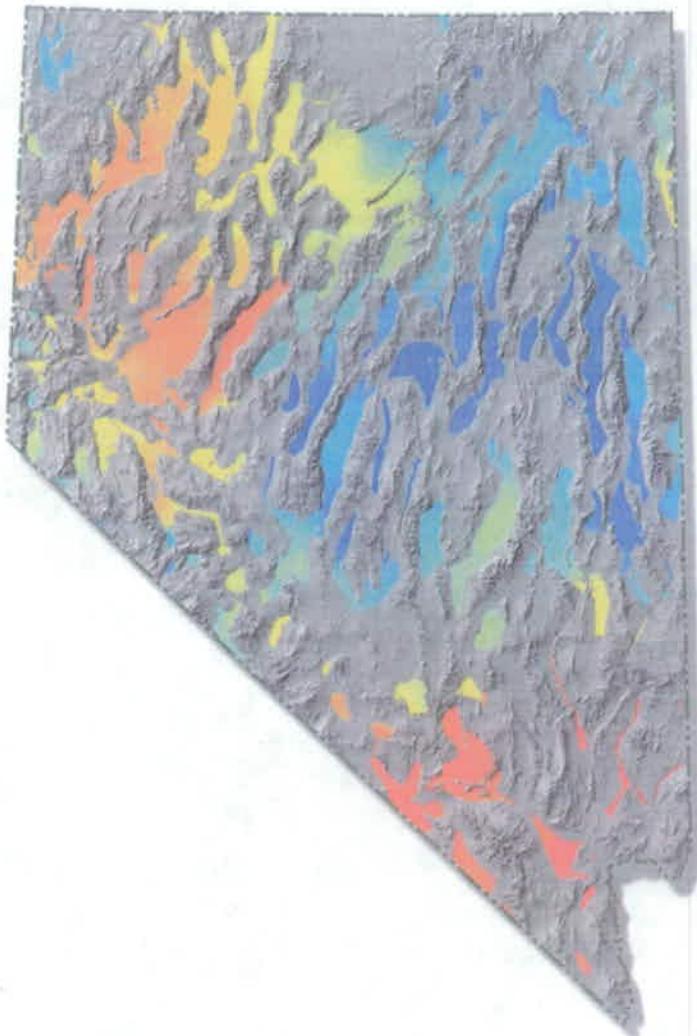


Prepared in cooperation with the
State of Nevada Department of Conservation and Natural Resources
Division of Environmental Protection

QA:N/A

Water-Table Levels and Gradients, Nevada, 1947–2004



Scientific Investigations Report 2006–5100

U.S. Department of the Interior
U.S. Geological Survey

FRONT COVER: Water-table surfaces in Nevada, 1947–2004.

Water-Table Levels and Gradients, Nevada, 1947–2004

By Thomas J. Lopes, Susan G. Buto, J. LaRue Smith, and Toby L. Welborn

Scientific Investigations Report 2006–5100

Prepared in cooperation with the
State of Nevada Department of Conservation and Natural Resources
Division of Environmental Protection

**U.S. Department of the Interior
U.S. Geological Survey**

U.S. Department of the Interior
Dirk Kempthorne, Secretary

U.S. Geological Survey
P. Patrick Leahy, Acting Director

Use of trade, product, or firm names in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

Carson City, Nevada, 2006

For additional information write to:
U.S. Geological Survey
Director, USGS Nevada Water Science Center
2730 N. Deer Run Road
Carson City, NV 89701
Email: GS-W-NVpublic-info@usgs.gov
URL: <http://nevada.usgs.gov/>

For more information about the USGS and its products:
Telephone: 1-888-ASK-USGS
World Wide Web: <http://www.usgs.gov/>

Although this report is in the public domain, permission must be secured from the individual copyright owners to reproduce any copyrighted materials contained within this report.

Scientific Investigations Report 2006-5100

Contents

Abstract.....	1
Introduction	2
Purpose and Scope	2
Methods	2
Water-Table and Depth-to-Water Contours.....	5
Water-Table and Depth-to-Water Surfaces	5
Water-Table Gradients.....	7
Water-Table Levels.....	8
Water-Table Gradients.....	13
Summary	18
References Cited	21
Plates	28

Figures

Figure 1. Hydrographic areas and locations of wells used to evaluate the accuracy of depth-to-water surfaces in Nevada.	3
Figure 2. Depth to water in spring 2001 in the Diamond Valley hydrographic area (153), Nevada.....	6
Figure 3. Differences in depth to water estimated from depth-to-water surface and water-table surfaces versus depth to water estimated from depth-to-water surfaces.	7
Figure 4. Sites where water-table gradients were characterized.	9
Figure 5. Variables measured at water-table-gradient sites.....	10
Figure 6. Depth to water estimated from depth-to-water surface versus measured depth to water.	10
Figure 7. Depth-to-water surfaces and areas of predominantly greasewood.....	14
Figure 8. Ground-water discharge areas, areas of predominantly greasewood, and depth-to-water less than 100 feet.	15
Figure 9. Differences between last and first depth-to-water measurements versus A , well depth, B , years between measurements, and C , first depth-to-water measurement.	16
Figure 10. Differences between last and first depth-to-water measurements grouped by hydrographic-area number.	17
Figure 11. Ranges in water-table gradients A , beneath alluvial fans and valley floors and B , grouped by adjacent consolidated-rock hydrogeologic unit.....	18
Figure 12. Water-table gradients in unconsolidated sediments versus A , horizontal hydraulic conductivity of adjacent consolidated hydrogeologic unit, B , upgradient precipitation, and C , distance to consolidated-rock contact.	19
Figure 13. Water-table and land-surface altitude versus distance from the well at the lowest land-surface altitude in Kyle Canyon, Pine Nut Creek, and Vicee Canyon.	20

Tables

Table 1.	Scoring system for selecting published water-table and depth-to-water contours used to determine water-table levels in Nevada	5
Table 2.	Information used to characterize water-table gradients in Nevada	11
Table 3.	Water-table measurements for Vicee Canyon, Pine Nut Creek, and Kyle Canyon, Nevada.....	12

Appendix

Appendix 1. Reports with water-level contours for Nevada.....	24
---	----

Plates

Plate 1.	Map showing water-table contours in Nevada, 1947–2004	28
Plate 2.	Map showing water-table surfaces in Nevada, 1947–2004	28
Plate 3.	Map showing depth-to-water surfaces in Nevada, 1947–2004.....	28

Conversion Factors and Datums

Multiply	By	To obtain
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
square mile (mi ²)	2.590	square kilometer
foot per day (ft/d)	0.3048	meter per day
acre-foot per year (acre-ft/yr)	1,233	cubic meter per year

Datums

Vertical coordinate information is referenced to the National Geodetic Vertical Datum of 1929; horizontal coordinate information is referenced to the North American Datum of 1927 (NAD 27).



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED BY THE U.S. GEOLOGICAL SURVEY
IN COORDINATION WITH THE
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

Scientific Investigation Report 2006-5100
Water-table contours—Plate 1
Lopes, T.J., Buto, S.G., Smith, J.L., and Welborn, T.L.,
Water-table levels and gradients in Nevada, 1947–2004

